

MULTIPLE OUTPUT CHARGE PUMP

Abstract of the Disclosure

A single mode buck/boost charge pump has multiple outputs and is adapted to power a plurality of separate loads, such as light emitting diodes, in a highly efficient manner. The multiple outputs have different voltages. The output current or voltage of at least one of the multiple outputs is regulated by a feedback circuit. The feedback circuit provides a control signal based on a comparison of a reference voltage with a feedback voltage. The feedback voltage is proportional to an output voltage when the charge pump is configured to regulate the output voltage. Alternately, the feedback voltage is a sense voltage across a sense resistor connected in series with a load when the charge pump is configured to regulate output current provided to the load.

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